

High throughput separation and purification of synthetic and natural products with Optimum Performance Laminar Chromatography

Papillard¹ D., Manach¹ M., Truchy¹ C., Laroche¹ S., Mincsovcics² E., Kerouredan¹ P., Amoyal¹ W.

1. Bionisis SA, 18-20 Avenue Edouard Herriot, F-92350 Le Plessis-Robinson, France, info@bionisis.com

2. OPLC-NIT Ltd., Andor u. 60., H-1119 Budapest, Hungary

Optimum Performance Laminar Chromatography™, or OPLC, is a pumped flow chromatography technique that combines the user-friendly interface of HPLC, with the capacity of flash chromatography and the multidimensionality of TLC. The uniqueness of OPLC lies in its column housing structure that allows flat planar columns (200-500µm thick) to be used like cylindrical glass or stainless steel columns within an HPLC system. A significant benefit of OPLC is that multiple samples can be separated side-by-side on one column in a single run, thereby dramatically improving throughput, while saving time and money.

Up until now, multiple-sample LC screening was limited to off-line techniques, i.e. the sample was applied directly to the column, much like is done with TLC (“spotting”). A new OPLC instrument has been designed which allows simultaneous injection, separation and fractionation of 4 or 8 samples on a single unsegmented flat column. The multiOPLC incorporates the Flowing Eluent Wall (FEW) Technology which creates virtual columns-in-a-column by the formation of sample-free, flowing fluidic walls between sample channels. This provides an efficient high-resolution tool where very high sample throughput is needed, as in screening of combinatorial libraries or natural product screening. This report describes the use of the multiOPLC system to perform simultaneous semi-preparative scale separations of this nature.